


| EXPRESS MAIL CERTIFICATE | | | |
|---|---|------------------|-------------------|
| I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. § 1.10 on the date indicated below and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231. | | | |
| Typed or Printed Name | Margaret D. Pierce | Express Mail No. | EL 563 388 639 US |
| Signature |  | Date | March 19, 2001 |

| | | |
|--|---|---------------------------|
| <p align="center">CERTIFICATION REGARDING SEQUENCE LISTING</p> <p>Address to: BOX PATENT APPLICATION Assistant Commissioner for Patents Washington, D.C. 20231</p> | Customer Number | 24353 |
| | Attorney Docket | BEAR-006CIP |
| | First Named | Kumagai et al. |
| | Application Number | Unassigned |
| | Filing Date | Herewith (March 19, 2001) |
| | Group Art Unit | Unassigned |
| | Examiner Name | Unassigned |
| | Title: "INTEGRIN BINDING MOTIF CONTAINING PEPTIDES AND METHODS OF TREATING SKELETAL DISEASES" | |

Sir:

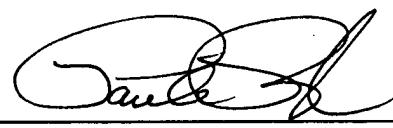
I hereby certify that the enclosed Sequence Listing is being submitted in paper copy and on a computer-readable diskette, and that the content of the paper and computer readable copies are the same.

I hereby also certify that the enclosed submission includes no new matter.

Applicants believe that no fee is due in connection with the filing of this paper. However, the Commissioner is hereby authorized to charge any fees which may be required by this paper, or to credit any overpayment, to Deposit Account No. 50-0815.

Respectfully submitted,
BOZICEVIC, FIELD & FRANCIS LLP

Date: March 19, 2001

By: 
Paula A. Borden
Registration No. 42,344

BOZICEVIC, FIELD & FRANCIS LLP
200 Middlefield Road, Suite 200
Menlo Park, CA 94025
Telephone: (650) 327-3400
Facsimile: (650) 327-3231

F:\DOCUMENT\BEAR (formerly 8302)\006CIP\Sequence Certification.wpd

09/812485

03/19/01

SEQUENCE LISTING

<110> Kumagai, Yoshinari
Blacher, Russel
Yoneda, Toshiyuki

<120> "Integrin Binding Motif Containing
Peptides and Methods of Treating Skeletal Diseases"

<130> BEAR-006CIP

<140> Unassigned

<141> 2001-03-19

<150> 09/641,034

<151> 2000-08-16

<160> 50

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 97

<212> PRT

<213> peptide

<400> 1

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Ser | Gln | Ala | Gln | Lys | Ser | Pro | Val | Lys | Ser | Lys | Ser | Thr | His | Arg |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ile | Gln | His | Asn | Ile | Asp | Tyr | Leu | Lys | His | Leu | Ser | Lys | Val | Lys | Lys |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Ile | Pro | Ser | Asp | Phe | Glu | Gly | Ser | Gly | Tyr | Thr | Asp | Leu | Gln | Glu | Arg |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Gly | Asp | Asn | Asp | Ile | Ser | Pro | Phe | Ser | Gly | Asp | Gly | Gln | Pro | Phe | Lys |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Asp | Ile | Pro | Gly | Lys | Gly | Glu | Ala | Thr | Gly | Pro | Asp | Leu | Glu | Gly | Lys |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Asp | Ile | Gln | Thr | Gly | Phe | Ala | Gly | Pro | Ser | Glu | Ala | Glu | Ser | Thr | His |
| | | | | 85 | | | | | 90 | | | | | 95 | |

Leu

<210> 2

<211> 47

<212> PRT

<213> peptide

<400> 2

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Gln | Lys | Ser | Pro | Val | Lys | Ser | Lys | Ser | Thr | His | Arg | Ile | Gln | His |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Asn | Ile | Asp | Tyr | Leu | Lys | His | Leu | Ser | Lys | Val | Lys | Lys | Ile | Pro | Ser |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Asp | Phe | Glu | Gly | Ser | Gly | Tyr | Thr | Asp | Leu | Gln | Glu | Arg | Gly | Asp | |
| | | 35 | | | | | 40 | | | | | 45 | | | |

<210> 3

<211> 47
<212> PRT
<213> peptide

<400> 3
Arg Gly Asp Ala Gln Lys Ser Pro Val Lys Ser Lys Ser Thr His Arg
1 5 10 15
Ile Gln His Asn Ile Asp Tyr Leu Lys His Leu Ser Lys Val Lys Lys
20 25 30
Ile Pro Ser Asp Phe Glu Gly Ser Gly Tyr Thr Asp Leu Gln Glu
35 40 45

<210> 4
<211> 47
<212> PRT
<213> peptide

<400> 4
Asp Ser Gln Ala Gln Lys Ser Pro Val Lys Ser Lys Ser Thr His Arg
1 5 10 15
Ile Gln His Asn Ile Asp Tyr Leu Lys His Leu Ser Lys Val Lys Lys
20 25 30
Ile Pro Ser Asp Phe Glu Gly Ser Gly Tyr Thr Asp Arg Gly Asp
35 40 45

<210> 5
<211> 44
<212> PRT
<213> peptide

<400> 5
Arg Gly Asp Ser Pro Val Lys Ser Lys Ser Thr His Arg Ile Gln His
1 5 10 15
Asn Ile Asp Tyr Leu Lys His Leu Ser Lys Val Lys Lys Ile Pro Ser
20 25 30
Asp Phe Glu Gly Ser Gly Tyr Thr Asp Leu Gln Glu
35 40

<210> 6
<211> 44
<212> PRT
<213> peptide

<400> 6
Asp Ser Gln Ala Gln Lys Ser Pro Val Lys Ser Lys Ser Thr His Arg
1 5 10 15
Ile Gln His Asn Ile Asp Tyr Leu Lys His Leu Ser Lys Val Lys Lys
20 25 30
Ile Pro Ser Asp Phe Glu Gly Ser Gly Arg Gly Asp
35 40

<210> 7
<211> 37
<212> PRT
<213> peptide

<400> 7
Arg Gly Asp Thr His Arg Ile Gln His Asn Ile Asp Tyr Leu Lys His

1 5 10 15
 Leu Ser Lys Val Lys Lys Ile Pro Ser Asp Phe Glu Gly Ser Gly Tyr
 20 25 30
 Thr Asp Leu Gln Glu
 35

<210> 8
 <211> 41
 <212> PRT
 <213> peptide

<400> 8
 Asp Ser Gln Ala Gln Lys Ser Pro Val Lys Ser Lys Ser Thr His Arg
 1 5 10 15
 Ile Gln His Asn Ile Asp Tyr Leu Lys His Leu Ser Lys Val Lys Lys
 20 25 30
 Ile Pro Ser Asp Phe Glu Arg Gly Asp
 35 40

<210> 9
 <211> 27
 <212> PRT
 <213> peptide

<400> 9
 Arg Gly Asp Leu Lys His Leu Ser Lys Val Lys Lys Ile Pro Ser Asp
 1 5 10 15
 Phe Glu Gly Ser Gly Tyr Thr Asp Leu Gln Glu
 20 25

<210> 10
 <211> 38
 <212> PRT
 <213> peptide

<400> 10
 Asp Ser Gln Ala Gln Lys Ser Pro Val Lys Ser Lys Ser Thr His Arg
 1 5 10 15
 Ile Gln His Asn Ile Asp Tyr Leu Lys His Leu Ser Lys Val Lys Lys
 20 25 30
 Ile Pro Ser Arg Gly Asp
 35

<210> 11
 <211> 24
 <212> PRT
 <213> peptide

<400> 11
 Arg Gly Asp Leu Ser Lys Val Lys Lys Ile Pro Ser Asp Phe Glu Gly
 1 5 10 15
 Ser Gly Tyr Thr Asp Leu Gln Glu
 20

<210> 12
 <211> 32
 <212> PRT
 <213> peptide

<400> 12
 Asp Ser Gln Ala Gln Lys Ser Pro Val Lys Ser Lys Ser Thr His Arg
 1 5 10 15
 Ile Gln His Asn Ile Asp Tyr Leu Lys His Leu Ser Lys Arg Gly Asp
 20 25 30

<210> 13
 <211> 21
 <212> PRT
 <213> peptide

<400> 13
 Arg Gly Asp Val Lys Lys Ile Pro Ser Asp Phe Glu Gly Ser Gly Tyr
 1 5 10 15
 Thr Asp Leu Gln Glu
 20

<210> 14
 <211> 28
 <212> PRT
 <213> peptide

<400> 14
 Asp Ser Gln Ala Gln Lys Ser Pro Val Lys Ser Lys Ser Thr His Arg
 1 5 10 15
 Ile Gln His Asn Ile Asp Tyr Leu Lys Arg Gly Asp
 20 25

<210> 15
 <211> 18
 <212> PRT
 <213> peptide

<400> 15
 Arg Gly Asp Ile Pro Ser Asp Phe Glu Gly Ser Gly Tyr Thr Asp Leu
 1 5 10 15
 Gln Glu

<210> 16
 <211> 25
 <212> PRT
 <213> peptide

<400> 16
 Asp Ser Gln Ala Gln Lys Ser Pro Val Lys Ser Lys Ser Thr His Arg
 1 5 10 15
 Ile Gln His Asn Ile Asp Arg Gly Asp
 20 25

<210> 17
 <211> 15
 <212> PRT
 <213> peptide

<400> 17
 Arg Gly Asp Asp Phe Glu Gly Ser Gly Tyr Thr Asp Leu Gln Glu
 1 5 10 15

<210> 18
<211> 19
<212> PRT
<213> peptide

<400> 18
Asp Ser Gln Ala Gln Lys Ser Pro Val Lys Ser Lys Ser Thr His Arg
1 5 10 15
Arg Gly Asp

<210> 19
<211> 12
<212> PRT
<213> peptide

<400> 19
Arg Gly Asp Gly Ser Gly Tyr Thr Asp Leu Gln Glu
1 5 10

<210> 20
<211> 13
<212> PRT
<213> peptide

<400> 20
Asp Ser Gln Ala Gln Lys Ser Pro Val Lys Arg Gly Asp
1 5 10

<210> 21
<211> 9
<212> PRT
<213> peptide

<400> 21
Arg Gly Asp Gly Tyr Thr Asp Leu Gln
1 5

<210> 22
<211> 10
<212> PRT
<213> peptide

<400> 22
Asp Ser Gln Ala Gln Lys Ser Arg Gly Asp
1 5 10

<210> 23
<211> 40
<212> PRT
<213> peptide

<400> 23
Arg Gly Asp Asn Asp Ile Ser Pro Phe Ser Gly Asp Gly Gln Pro Phe
1 5 10 15
Lys Asp Ile Pro Gly Lys Gly Glu Ala Thr Gly Pro Asp Leu Glu Gly
20 25 30
Lys Asp Ile Gln Thr Gly Phe Ala

35

40

<210> 24
 <211> 40
 <212> PRT
 <213> peptide

<400> 24
 Asn Asp Ile Arg Gly Asp Ser Pro Phe Ser Gly Asp Gly Gln Pro Phe
 1 5 10 15
 Lys Asp Ile Pro Gly Lys Gly Glu Ala Thr Gly Pro Asp Leu Glu Gly
 20 25 30
 Lys Asp Ile Gln Thr Gly Phe Ala
 35 40

<210> 25
 <211> 35
 <212> PRT
 <213> peptide

<400> 25
 Asn Asp Ile Ser Pro Phe Arg Gly Asp Ser Gly Asp Gly Gln Pro Phe
 1 5 10 15
 Lys Asp Ile Pro Gly Lys Gly Glu Ala Thr Gly Pro Asp Leu Glu Gly
 20 25 30
 Lys Asp Ile
 35

<210> 26
 <211> 30
 <212> PRT
 <213> peptide

<400> 26
 Asn Asp Ile Ser Pro Phe Ser Gly Asp Arg Gly Asp Gly Gln Pro Phe
 1 5 10 15
 Lys Asp Ile Pro Gly Lys Gly Glu Ala Thr Gly Pro Asp Leu
 20 25 30

<210> 27
 <211> 45
 <212> PRT
 <213> peptide

<400> 27
 Phe Ser Gly Asp Gly Gln Pro Phe Lys Asp Ile Pro Gly Lys Gly Glu
 1 5 10 15
 Ala Thr Gly Pro Asp Leu Glu Gly Lys Asp Ile Gln Thr Gly Phe Ala
 20 25 30
 Gly Pro Ser Glu Ala Glu Ser Arg Gly Asp Thr His Leu
 35 40 45

<210> 28
 <211> 35
 <212> PRT
 <213> peptide

<400> 28

Ile Pro Gly Lys Gly Glu Ala Thr Gly Pro Asp Leu Glu Gly Lys Asp
 1 5 10 15
 Ile Gln Thr Gly Phe Ala Gly Pro Ser Glu Arg Gly Asp Ala Glu Ser
 20 25 30
 Thr His Leu
 35

<210> 29
 <211> 30
 <212> PRT
 <213> peptide

<400> 29
 Glu Ala Thr Gly Pro Asp Leu Glu Gly Lys Asp Ile Gln Thr Gly Phe
 1 5 10 15
 Ala Gly Arg Gly Asp Pro Ser Glu Ala Glu Ser Thr His Leu
 20 25 30

<210> 30
 <211> 33
 <212> PRT
 <213> peptide

<400> 30
 Asn Asp Ile Ser Pro Phe Ser Gly Asp Gly Gln Pro Phe Lys Asp Arg
 1 5 10 15
 Gly Asp Ile Pro Gly Lys Gly Glu Ala Thr Gly Pro Asp Leu Glu Gly
 20 25 30
 Lys

<210> 31
 <211> 33
 <212> PRT
 <213> peptide

<400> 31
 Gly Lys Gly Glu Ala Thr Gly Pro Asp Leu Glu Gly Lys Asp Ile Arg
 1 5 10 15
 Gly Asp Gln Thr Gly Phe Ala Gly Pro Ser Glu Ala Glu Ser Thr His
 20 25 30
 Leu

<210> 32
 <211> 40
 <212> PRT
 <213> peptide

<400> 32
 Phe Ser Gly Asp Gly Gln Pro Phe Lys Asp Ile Pro Gly Lys Gly Glu
 1 5 10 15
 Ala Thr Gly Arg Gly Asp Pro Asp Leu Glu Gly Lys Asp Ile Gln Thr
 20 25 30
 Gly Phe Ala Gly Pro Ser Glu Ala
 35 40

<210> 33

<211> 31
<212> PRT
<213> peptide

<400> 33
Asp Gly Gln Pro Phe Lys Asp Ile Pro Gly Lys Gly Glu Ala Thr Gly
1 5 10 15
Arg Gly Asp Pro Asp Leu Glu Gly Lys Asp Ile Gln Thr Gly Phe
20 25 30

<210> 34
<211> 25
<212> PRT
<213> peptide

<400> 34
Pro Phe Lys Asp Ile Pro Gly Lys Gly Glu Ala Thr Gly Arg Gly Asp
1 5 10 15
Pro Asp Leu Glu Gly Lys Asp Ile Gln
20 25

<210> 35
<211> 28
<212> PRT
<213> peptide

<400> 35
Asp Ile Pro Gly Lys Gly Glu Ala Thr Gly Arg Gly Asp Pro Asp Leu
1 5 10 15
Glu Gly Lys Asp Ile Gln Thr Gly Phe Ala Gly Pro
20 25

<210> 36
<211> 31
<212> PRT
<213> peptide

<400> 36
Asp Gly Gln Pro Phe Lys Asp Ile Pro Gly Lys Gly Glu Ala Thr Gly
1 5 10 15
Arg Gly Asp Pro Asp Leu Glu Gly Lys Asp Ile Gln Thr Gly Phe
20 25 30

<210> 37
<211> 28
<212> PRT
<213> peptide

<400> 37
Gly Lys Gly Glu Ala Thr Gly Arg Gly Asp Pro Asp Leu Glu Gly Lys
1 5 10 15
Asp Ile Gln Thr Gly Phe Ala Gly Pro Ser Glu Ala
20 25

<210> 38
<211> 19
<212> PRT
<213> peptide

<400> 38
Glu Ala Thr Gly Arg Gly Asp Pro Asp Leu Glu Gly Lys Asp Ile Gln
1 5 10 15
Thr Gly Phe

<210> 39
<211> 13
<212> PRT
<213> peptide

<400> 39
Glu Ala Thr Gly Arg Gly Asp Pro Asp Leu Glu Gly Lys
1 5 10

<210> 40
<211> 10
<212> PRT
<213> peptide

<400> 40
Glu Ala Thr Gly Arg Gly Asp Pro Asp Leu
1 5 10

<210> 41
<211> 4
<212> PRT
<213> peptide

<400> 41
Ser Gly Asp Gly
1

<210> 42
<211> 12
<212> PRT
<213> peptide

<400> 42
Asp Asn Asp Ile Ser Pro Phe Ser Gly Asp Gly Gln
1 5 10

<210> 43
<211> 12
<212> PRT
<213> peptide

<220>
<221> VARIANT
<222> (1)...(12)
<223> Xaa = Any Amino Acid

<400> 43
Asp Xaa Asp Xaa Ser Xaa Phe Xaa Gly Xaa Xaa Gln
1 5 10

<210> 44
<211> 15

<212> PRT
<213> peptide

<400> 44
Ile Pro Ser Asp Phe Glu Gly Ser Gly Tyr Thr Asp Leu Gln Glu
1 5 10 15

<210> 45
<211> 15
<212> PRT
<213> peptide

<400> 45
Asp Phe Glu Gly Ser Gly Tyr Thr Asp Leu Gln Glu Arg Gly Asp
1 5 10 15

<210> 46
<211> 15
<212> PRT
<213> peptide

<400> 46
Tyr Thr Asp Leu Gln Glu Arg Gly Asp Asn Asp Ile Ser Pro Phe
1 5 10 15

<210> 47
<211> 15
<212> PRT
<213> peptide

<400> 47
Glu Arg Gly Asp Asn Asp Ile Ser Pro Phe Ser Gly Asp Gly Gln
1 5 10 15

<210> 48
<211> 15
<212> PRT
<213> peptide

<400> 48
Asn Asp Ile Ser Pro Phe Ser Gly Asp Gly Gln Pro Phe Lys Asp
1 5 10 15

<210> 49
<211> 23
<212> PRT
<213> peptide

<400> 49
Thr Asp Leu Gln Glu Arg Gly Asp Asn Asp Ile Ser Pro Phe Ser Gly
1 5 10 15
Asp Gly Gln Pro Phe Lys Asp
20

<210> 50
<211> 4
<212> PRT
<213> peptide

<220>
<221> VARIANT
<222> (1)...(4)
<223> Xaa = Any Amino Acid

<400> 50
Ser Gly Xaa Gly
1